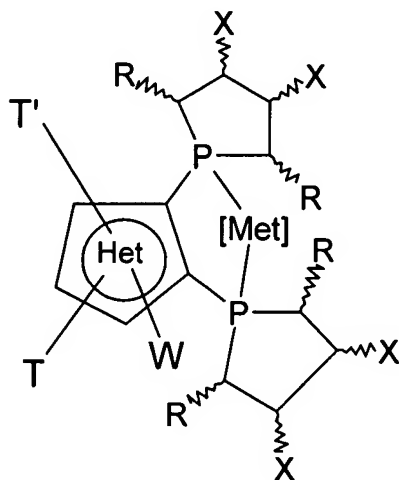


AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A metallic catalyst ~~Metallic catalysts~~ of the formula (I)



(I)

where:

[Met] is a metal selected from the group consisting of Ru, Rh, Ir, Pt, Pd, Ni, Re, and Cu, having a number of oxidation n, where n is 0, +1, +2 or +3, and containing possible ancillary co-ligands for completing its state of valence;



represents an aromatic pentatomic heterocycle, containing at least one hetero-atom selected from the group consisting of: oxygen, sulphur and nitrogen;

T and T', which are the same as or different from one another, are selected from the group consisting of hydrogen, a linear, cyclic or branched C1-C10 alkyl, hydroxyalkyl, alkoxyalkyl, phenyl, alkylphenyl, naphthyl, alkoxyphenyl, dialkylaminophenyl, carboxyphenyl,

carbalkoxyphenyl, or else T and T', taken together, form an aromatic carbocyclic ring, possibly substituted by one or more alkyl, hydroxy, alkoxy, dialkylamino, carboxy, carbalkoxy or sulphonic groups;

W is a substituent present only when the hetero-atom is nitrogen and is selected from H, a linear, cyclic or branched C1-C10 alkyl, alkoxyalkyl, phenyl, alkylphenyl, naphthyl, alkoxyphenyl, dialkylaminophenyl, carboxyphenyl, carbalkoxyphenyl;

R is selected from hydrogen, a linear, cyclic or branched C1-C10 alkyl, hydroxyalkyl, alkoxyalkyl, phenyl, alkylphenyl;

X is selected from H, a linear, cyclic or branched C1-C10 alkyl, hydroxy, alkoxy, benzyloxy, acyloxy, O-tetrahydropyranyl, O-tetrahydrofuranyl, or else where the two substituents X, taken together with m carbon atoms bound thereto, with m = 1, 2 or 3, form a carbocyclic ring with a total of 5-7 atoms or a saturated heterocyclic ring with 5-7 atoms.

2. (Currently Amended) The catalyst ~~eatalysts~~ according to Claim 1, wherein said catalyst is ~~eatalysts are~~ in racemic form.

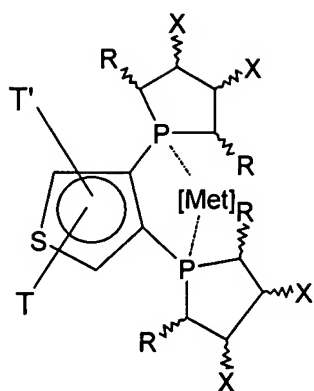
3. (Currently Amended) The catalyst ~~eatalysts~~ according to Claim 1, wherein said catalyst is ~~eatalysts are~~ in meso form.

4. (Currently Amended) The catalyst according to Claim 1, wherein said catalyst is ~~eatalysts are~~ in enantiomerically enriched form of configuration R or S with the limitation, that:

a) the carbon atoms in positions 2' and 5' of the phospholanic rings possess the same absolute configuration with respect to one another;

b) the carbon atoms in positions 3' and 4' of the phospholanic rings possess the same absolute configuration with respect to one another.

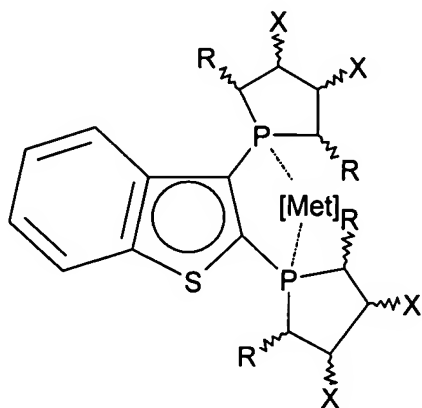
5. (Currently Amended) The catalyst ~~eatalysts~~, according to claim 1, of formula (V).



(V)

in which T, T', R, X and [Met] have the meanings indicated above.

6. (Currently Amended) The catalyst ~~eatalysts~~, according to claim 1, of formula (VI)



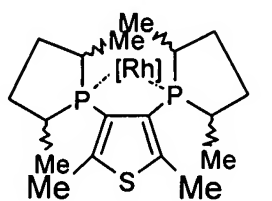
(VI)

in which R, X and [Met] have the meanings indicated above.

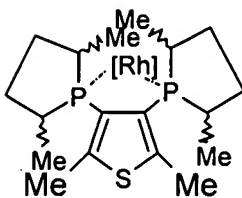
7. (Currently Amended) The catalyst ~~eatalysts~~ according to Claim 5, wherein T and T'

are both H or both methyl.

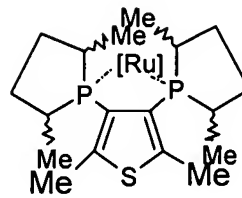
8. (Currently Amended) The catalyst catalysts according to Claim 5, selected from the group consisting of:



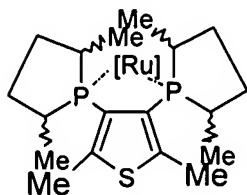
[Rh] = Rh(COD)BF₄



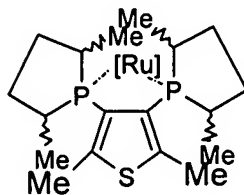
[Rh] = Rh(COD)OTf



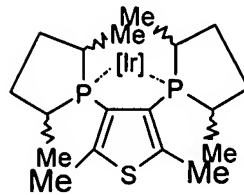
[Ru] = Ru(p.cimene)I



[Ru] = Ru(bis metallil)



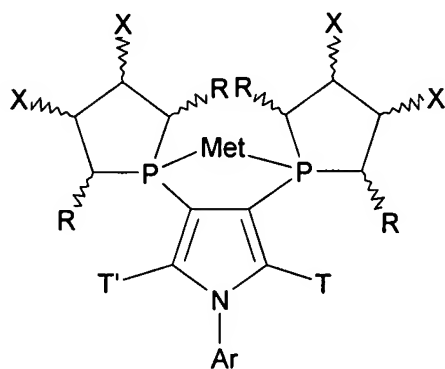
[Ru] = RuX₂



[Ir] = Ir(COD)OTf

where the two stereocentres in positions 2' and 5' of the phospholanic rings have both absolute configuration (R) or both absolute configuration (S).

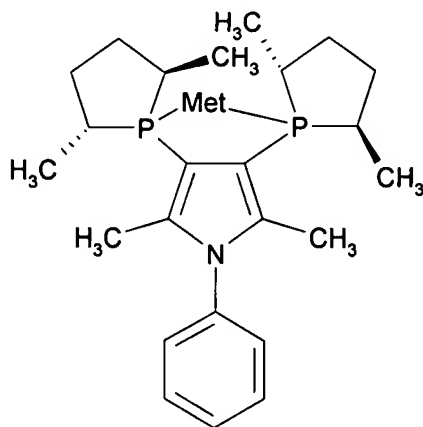
9. (Currently Amended) The catalyst ~~catalysts~~ according to claim 1 of formula (VII)



(VII)

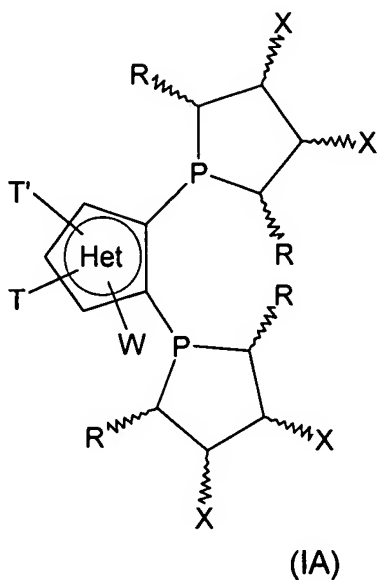
wherein T and T' preferably are both H or both the same linear, cyclic or branched C1-C10 alkyl,
R is CH₃, Ar is an electron donor aryl residue.

10. (Original) The catalyst according to claim 9 having the following formula



wherein Met has the aforesaid meanings.

11. (Currently Amended) A ligand ~~Ligands~~ with an ortho *bis*(1-phospholanyl)heteroarenic structure of formula (IA)



in which



represents an aromatic pentatomic heterocycle, containing at least one hetero-atom selected from the group consisting of oxygen, sulphur and nitrogen;

T and T', which are the same as or different from one another, are selected from hydrogen, a linear, cyclic or branched C1-C10 alkyl, hydroxyalkyl, alkoxyalkyl, phenyl, alkylphenyl, naphthyl, alkoxyphenyl, dialkylaminophenyl, carboxyphenyl, carbalkoxyphenyl, or else T and T' taken together form an aromatic carbocyclic ring possibly substituted by one or more alkyl, hydroxy, alkoxy, dialkylamino, carboxy, carbalkoxy or sulphonic groups;

W is a substituent present only when the hetero-atom is nitrogen and is selected from H, a linear, cyclic or branched C1-C10 alkyl, alkoxyalkyl, phenyl, alkylphenyl, naphthyl, alkoxyphenyl, dialkylaminophenyl, carboxyphenyl, carbalkoxyphenyl;

R is selected from hydrogen, a linear, cyclic or branched C1-C10 alkyl, hydroxyalkyl,

alkoxyalkyl, phenyl, alkylphenyl;

X is selected from H, a linear, cyclic or branched C1-C10 alkyl, hydroxy, alkoxy, benzyloxy, acyloxy, O-tetrahydropyranyl, O-tetrahydrofuranyl, or else where the two substituents X, taken together with m carbon atoms bound thereto, with m = 1, 2 or 3, form a carbocyclic ring with a total of 5-7 atoms or a saturated heterocyclic ring with 5-7 atoms.

12. (Currently Amended) The ligand ~~ligands~~ according to Claim 11, wherein said ligand ~~is ligands-are~~ in racemic form.

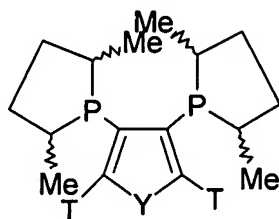
13. (Currently Amended) The ligand ~~ligands~~ according to Claim 11, wherein said ligand ~~is ligands-are~~ in meso form.

14. (Currently Amended) The ligand ~~ligands~~ according to Claim 11, wherein said ligand ~~is ligands-are~~ in enantiomerically enriched form of configuration R or S with the limitation, that:

a) the carbon atoms in positions 2' and 5' of the phospholanic rings possess the same absolute configuration with respect to one another;

b) the carbon atoms in positions 3' and 4' of the phospholanic rings possess the same absolute configuration with respect to one another.

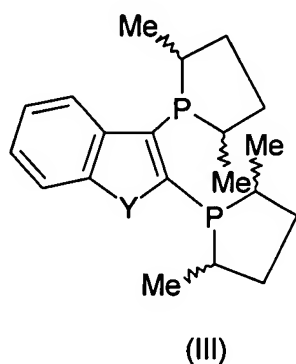
15. (Currently Amended) The ligand ~~ligands~~ according to claim 11, wherein said ligand ~~has ligands-have~~ the following formula (II)



(II)

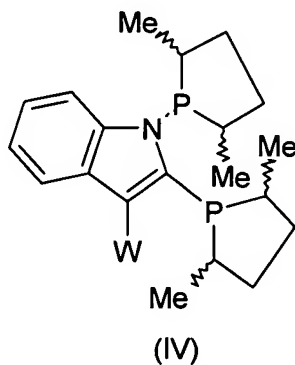
and in which Y is selected from O, S and N(W), T and W are selected from hydrogen and methyl, and where the carbon atoms in positions 2' and 5' of the phospholanic rings have both absolute configuration (R) or both absolute configuration (S).

16. (Currently Amended) The ligand ligands according to claim 11, wherein said ligand has ~~ligands have~~ the following formula (III)



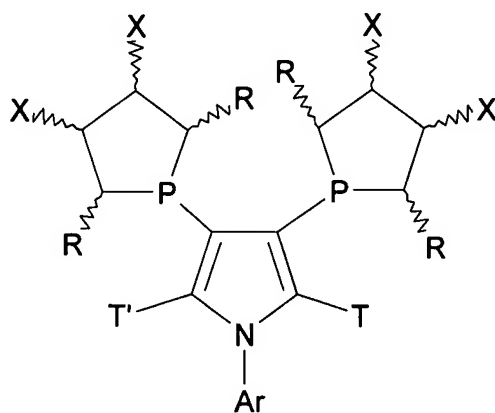
in which Y is selected from O, S and N(W), T and W are selected from hydrogen and methyl, and where the carbon atoms in positions 2' and 5' of the phospholanic rings have both absolute configuration (R) or both absolute configuration (S).

17. (Currently Amended) The ligand ligands according to claim 11, wherein said ligand has ~~ligands have~~ the following formula (IV)



and in which W is selected from hydrogen and methyl and where the carbon atoms in positions 2' and 5' of the phospholanic rings have both absolute configuration (R) or both absolute configuration (S).

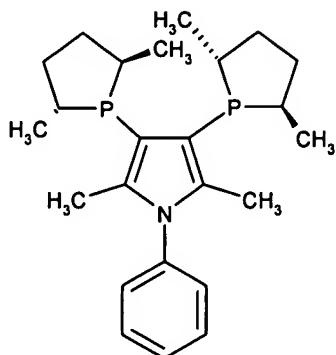
18. (Currently Amended) The ligand ~~ligands~~ according to claim 11 wherein said ligand ~~has~~
~~ligands have~~ the following general formula (VIIA)



(VIIA)

wherein T and T' preferably are both H or both the same linear, cyclic or branched C1-C10 alkyl, R is CH₃, Ar is an electron donor aryl residue.

19. (Currently Amended) The ligand according to claim 18 wherein said ligand has
~~ligands have~~ the following formula.



20. (Currently Amended) A process of preparation of the catalyst ~~catalysts~~ according to claim 1, comprising the reaction of [Met] in which [Met] has the aforesaid meanings, with the ligand ~~ligands~~ according to claim 11 ~~any one of Claims 11-18~~.

21-32. (Canceled).

33. (New) The catalyst according to claim 1 for use in chemoselective syntheses.

34. (New) The catalyst according to claim 1 for use in a regioselective syntheses.

35. (New) The catalyst according to claim 1 for use in a stereoselective syntheses.

36. (New) The catalyst according to claim 4 for use in stereoselective syntheses.

37. (New) The catalyst according to claim 35, wherein said stereoselective syntheses are selected from the group consisting of:

- hydrogenation of C=C, C=O, C=N groups
- isomerization of enamines and formation of C-C bonds.

38. (New) The catalyst according to claim 36, wherein said stereoselective syntheses are selected from the group consisting of:

- hydrogenation of C=C, C=O, C=N groups
- isomerization of enamines and formation of C-C bonds.

39. (New) The catalyst according to claim 37, wherein said formation of C-C bonds are selected from the group consisting of the Heck reaction, the Diels-Alder reaction, allylic substitution and aldolic condensation.

40. (New) The catalyst according to claim 38, wherein said formation of C-C bonds are selected from the group consisting of the Heck reaction, the Diels-Alder reaction, allylic substitution and aldolic condensation.